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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/629,022	07/31/2000	Douglas D. Do	500414.02	5186
27076	7590	12/01/2004	EXAMINER	
DORSEY & WHITNEY LLP INTELLECTUAL PROPERTY DEPARTMENT SUITE 3400 1420 FIFTH AVENUE SEATTLE, WA 98101			FERNANDEZ, KALIMAH	
			ART UNIT	PAPER NUMBER
			2881	

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/629,022	Applicant(s) DO ET AL.	
	Examiner Kalimah Fernandez	Art Unit 2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 16-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 16-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

and

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-2 and 11 stand rejected under 35 U.S.C. 102(e) as being anticipated by US Pat No 6,278,114 issued to Mitsui.
3. Mitsui discloses a source of electrons (col.1, lines 31-33).
4. Mitsui discloses a focusing device positioned proximate to the source of electrons (col.4, lines 11-14).

5. Mitsui discloses the focusing device focusing the electron beam to have a first depth and a second depth of focus (col.3, lines 63-65; col.4, lines 9-14, lines 33-36). Namely, Mitsui discloses varying the depth of focus according the layer of interest (col.3, lines 49-65; col.4, lines 12-14).

6. Mitsui discloses forming at least one representation of the semiconductor corresponding to electrons focused at the first and second depths of focus and impinging on one of more surfaces of the semiconductor device (col.4, lines 24-36; col.4, line 66- col.5, line 6).

7. Mitsui discloses a support (15) (col.1, lines 43-45), wherein Mitsui discloses the use of a typical SEM as described in col. 1, lines 25-45 with the improvement measurement system as in col.2, lines 42-45.

8. As per claim 2, Mitsui discloses the support (15) being movable relative to the electron beam (col.1, lines 43-44). Mitsui teaches also the electron beam moved/deflected in relative to the sample (see for example col.4, lines 46-53).

9. As per claim 11, Mitsui discloses the focusing device focuses the electron beam to have the first depth of focus prior to focusing the electron beam to have the second depth of focus (col.5, lines 34-60).

10. Claims 20-24 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by US Pat No 5,747,816 issued to Kurosaki.

11. Kurosaki discloses a first and second source of electrons (see fig.4).

12. Kurosaki discloses a port surface having a first and second ports therethrough, the first port being positioned proximate to the source to form a first electron beam when the electrons pass therethrough, the second port forming a second electron beam (see fig.4).

13. Kurosaki discloses a first focusing device (55) and second focusing device (56).

14. Kurosaki discloses a support (46) movable in any of the x, y, or z planes (see for example col.3, lines 30-34).

15. Kurosaki discloses a third lens (57) and fourth lens (58).

16. Kurosaki discloses the possibility of positioning the first and second beams at different focal position (see for example col.7, lines 17-40).

17. As per claims 21-22, Kurosaki disclose the support movable in a direction generally transverse (in the x or y planes) and aligned (in

the z- direction) to at least one of the first and second electrons beam (see col.5, line 39 to col. 6, line 17).

18. As per claim 23, Kurosaki disclose a first detector (47) and a second detector (48).

19. As per claim 24, Kurosaki disclose the possibility of a third detector--- optical microscope detector (5) associated with each electron optical columns (see col. 7, lines 30-35).

20. As per claim 26, Kurosaki disclose a display coupled to either of the detectors to graphically display as recited (see col. 5, lines 46-63).

Claim Rejections - 35 USC § 103

21. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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22. Claims 12-14 and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat No 5,834,783 issued to Muraki et al and in view of US Pat No 4,600,839 issued to Ichihashi et al.

23. Muraki et al disclose a source of electrons (1) (see fig.1).

24. Muraki et al disclose a port surface (3) having a first and second ports therethrough, the first port being positioned proximate to the source to form a first electron beam when the electrons pass therethrough, the second port forming a second electron beam (see fig.1).

25. Muraki et al disclose a first focusing device (301-1) and second focusing device (301-2) (see col.10, lines 13-20).

26. Muraki et al disclose the first beam being focused at a different position than the second beam (col.10, lines 13-25).

27. Muraki et al discloses a support movable in any of the x, y, or z planes (col.8, lines 65-67).

28. Muraki et al teach the claimed invention except for the plurality of detector.

29. However, Ichihashi et al teach the use of multiple detectors (col.3, lines 5-11).

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30. It would have been obvious to an ordinary artisan to incorporate Ichihashi et al into Muraki since Ichihashi et al teaches the desirability of additional detectors (see for example col.1, line10 to col.2, line 30) and the elimination of certain alignment measurement errors (col.3, lines 8-11).

31. Moreover, it would have been an obvious to an ordinary artisan at the time the invention was made to add detectors, since it has been held the mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

32. As per claims 13-14, Muraki et al discloses the support movable in a direction generally transverse (in the x or y planes) and aligned (in the z- direction) to at least one of the first and second electrons beam (see col.8, lines 65-67; col.21, lines 13-19; fig. 1).

33. As per claim 16, Ichihashi et al teach a plurality of detector (at least three detectors).

34. As per claim 17, Muraki et al teach a memory device (col.23, lines 9-13). In addition, Ichihashi et al teach a memory device (col.5, lines 26-29).

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35. As per claim 18, Ichihashi et al teaches the ability to construct a graphical representation of the signal voltage (col.5, lines 15-35).

36. As per claim 19, the use of a printing device is deemed obvious in view of the teachings of Muraki and Ichihashi et al since the use of a printing device is notoriously old in the art. In addition, an ordinary skilled artisan would have obvious motivation to use a printing device since having a printout of the graphical facilitates analysis by enabled to view the graphs in hard copy rather than via the display.

37. Claims 25 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat No. 5,747,816 issued to Kurosaki.

38. Kurosaki teach the claimed invention except for a memory for storing signals and a printing device.

39. It would have been obvious to an ordinary artisan at the time of the invention to modify Kurosaki by adding a memory device and printing device because the combination of notoriously old parts cannot support patentably.

40. Memory device is notoriously old in the art. An artisan of ordinary skill would find obvious motivation to include a memory device from Kurosaki's disclose of an imaging processing step (col.3, line 63-col.4, line 6), which suggests the use of computer memory.

41. Likewise, a printing device is notoriously old in the art. An ordinary skilled artisan would have obvious motivation to use a printing device since having a printout of the graphical facilitates analysis by enabled to view the graphs in hard copy rather than via the display.

Response to Arguments

42. Applicant's arguments filed 7-16-04 have been fully considered but they are not persuasive. Applicant advances two points: 1) Mitsui fails to teach "the support being movable relative to the other of the electron beam and the support in any of the x, y, or z planes" and 2) the rejection of claims 15-17 and 19 is based on impermissible hindsight. Pursuant to presently amended claim 20 and its dependents, applicant's argument is moot because new grounds of rejection are necessitated by the amendment.

Movable Support

43. MPEP 2111 requires all claim be given their broadest reasonable interpretation. Here, the claim language requires either the electron or the support be movable in any plane (x, y, or z) relative to one another. Hence, the broadest-reasonable

interpretation is the claim requires either a movable beam in relation to the support or movable support in relation to the beam.

44. Mitsui teach an improved auto-focus method usable in a conventional apparatus. Mitsui teaches the electron beam moved/deflected in relative to the sample (see for example col.4, lines 46-53). Mitsui teaches also the movable stage in a conventional apparatus (see col.1, lines 29-45). Consequentially, Mitsui anticipates the claimed invention.

Hindsight

45. It is well-established hindsight reconstruction is not permitted when applying 35 U.S.C. 103. Equally, it is recognized any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). Nevertheless, an obviousness determination must evaluate prior art in light of the knowledge, which was within the level of ordinary skill at the time the claimed invention was made alone. In effect, the inquiry ""time-freeze[s]" the period and place the invention was made." *Radix Corp. v. Samuels*, 13 USPQ 2d 1689, 1693. When the prior-art suggests the desirability of a

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selected combination and a subsequent claimed invention recites this very combination, the claimed invention is properly deemed obvious.

46. Here, the rejection of claims 15-17 and 19 relies on Muraki et al primarily and Ichihashi et al as a secondary reference. This rejection is not based upon impermissible hindsight because Ichihashi et al disclose the desirability of additional detectors in a conventional scanning microscope (see for example col.1, line10 to col.2, line 30). Ichihashi et al disclose also the advantage of alignment error correction. This is ample motivation for the obvious combination of Muraki et al and Ichihashi.

47. This conclusion is further supported by *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8, which held non-obviousness cannot be easily achieved by adding prior-art parts unless the aggregated effect of the parts is synergistic. Here, Muraki et al teach a single detector (10). Absence a synergism showing, the present invention is not patentable over Muraki et al in view of Ichihashi et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kalimah Fernandez whose telephone number is 571-272-2470. The examiner

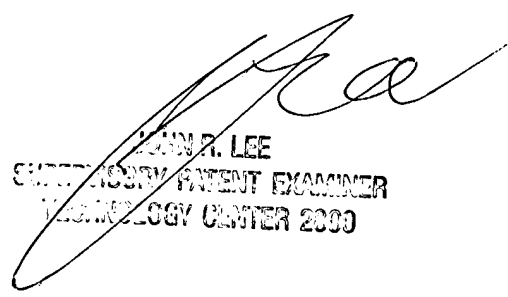
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can normally be reached on Mon-Tues 6:30-3:30; Wed-Thurs 8-5 and Fri.9am-6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R Lee can be reached on 571-272-2477. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KF


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